Format No: CP/TF/01

TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Date: 19-03-20

Lab ID	:	CP-2020-05-04-04
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant in Kempegowda Ward No:01 of Yelahanka Sub Division
Agency	:	Sri. Veeranjaneya, Sri Sai Vishal Ro Technologies, No:31, C94, Nimishamba Building 2nd Floor, Opp 10th BMTC Bus Depot ,K.K.Halli, Bangalore-560043
Customer's Reference	:	EE/YNK.D/EPMT-16/W.O/256/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	16-03-20
Sample Type/Size	:	Solid concrete blocks size (400X150X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	16-03-20

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	405	150	199	12089	33.254	2750.7	2707.7	Not less than 1800Kg/m^3
2	404	153	202	12486	32.444	2598.4		
3	401	151	199	12050	33.426	2774.0		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	33.91	32.25	4.89	4.25	Shall not be more than 10% by mass
2	33.57	32.14	4.28		
3	33.44	32.24	3.59		

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Lab ID : **CP-2020-05-04-04** **Date: 19-03-20**

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	400	153	201	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	401	153	199	
3	403	152	199	
4	401	152	202	
5	401	150	200	
6	402	150	199	
7	400	151	200	
8	404	153	199	
9	404	152	200	
10	400	151	203	
11	402	152	199	
12	400	151	199	
13	400	150	202	
14	399	150	200	
15	402	153	202	
16	400	151	202	
17	401	149	202	
18	400	152	199	
19	403	152	200	
20	401	153	200	
Average of 20	401	151	200	

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Lab ID : CP-2020-05-04-04

Date: 19-03-20

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	400	153	61096	285.1	4.7	4.7
2	401	153	61367	283.8	4.6	
3	403	152	61091	284.2	4.7	
4	401	152	60950	284.0	4.7	
5	401	150	59990	283.1	4.7	
6	402	150	60458	283.3	4.7	
7	400	151	60306	285.9	4.7	
8	404	153	61630	283.0	4.6	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	Minimum average	Minimum Individual units.
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2020-05-04-04 **Date: 19/03/2020**

Customer : Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.

Address : Yelahanka Sub Division, BBMP, Bangalore.

Project Name : Construction of RO Plant in Kempegowda Ward No:01 of Yelahanka Sub Division

Agency : Sri. Veeranjaneya, Sri Sai Vishal Ro Technologies, No:31, C94, Nimishamba Building 2nd Floor, Opp 10th BMTC Bus Depot ,K.K.Halli, Bangalore-560043

Customer's Reference : EE/YNK.D/EPMT-16/W.O/256/2019-20

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 14-03-20

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 19/03/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M20	12/03/2020	19/03/2020	150.82 X 149.92 X 151.77	22611	8.417	428.7	19.0	18.9
2	PCC	M20	12/03/2020	19/03/2020	149.25 X 150.14 X 149.56	22408	8.735	423.4	18.9	
3	PCC	M20	12/03/2020	19/03/2020	150.80 X 150.95 X 149.67	22763	8.615	430.3	18.9	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	CP-2020-05-04-04
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant in Kempegowda Ward No:01 of Yelahanka Sub Division
Agency	:	Sri. Veeranjaneya, Sri Sai Vishal Ro Technologies, No:31, C94, Nimishamba Building 2nd Floor, Opp 10th BMTC Bus Depot ,K.K.Halli, Bangalore-560043
Customer's Reference	:	EE/YNK.D/EPMT-16/W.O/256/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	14-03-20
Customer ID	:	PCC
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	09/04/2020

Date: 09/04/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M20	12/03/2020	09/04/2020	151.41 X 149.49 X 149.71	22633	8.801	541.0	23.9	23.3
2	PCC	M20	12/03/2020	09/04/2020	151.50 X 149.54 X 151.12	22656	8.171	503.9	22.2	
3	PCC	M20	12/03/2020	09/04/2020	149.04 X 150.37 X 151.35	22411	8.765	529.8	23.6	

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QC ABSTRACT

NAME OF WORK: Construction of RO Plant in Kempegowda Ward No:01 of Yelahanka Sub Division

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Block(400*150*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1
6	PCC(M20)	Compressive Strength(7days and 28days)	1 set /1-5 cum	3.51	2	2
7	Mortar Sand	Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		Compacted Bulk Density	One Test		1	1
		Loose Bulk Density	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1
8	Plaster Sand	Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1

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Asst. Executive Engineer
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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-05-04-04** **Date: 09-03-20**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant in Kempegowda Ward No:01 of Yelahanka Sub Division
Agency	:	Sri. Veeranjaneya, Sri Sai Vishal Ro Technologies, No:31, C94, Nimishamba Building 2nd Floor, Opp 10th BMTC Bus Depot ,K.K.Halli, Bangalore-560043
Customer Reference	:	EE/YNK.D/EPMT-16/W.O/256/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-03-20
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	06-03-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	237	237	4.7	95.3	90-100
3	10 mm	2544	2781	55.6	44.4	25-55
4	4.75 mm	2107	4888	97.8	2.2	0-10
5	Pan	112	5000	100	0	–

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Format No: CP/TF/01

TEST RESULTS OF STEEL

Lab ID	:	**CP-2020-05-04-04** **Date: 07-03-20**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant in Kempegowda Ward No:01 of Yelahanka Sub Division
Agency	:	Sri. Veeranjaneya, Sri Sai Vishal Ro Technologies, No:31, C94, Nimishamba Building 2nd Floor, Opp 10th BMTC Bus Depot ,K.K.Halli, Bangalore-560043
Customer's Reference	:	EE/YNK.D/EPMT-16/W.O/256/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-03-20
Sample Type	:	Sunvik
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	06-03-20

SLNo	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory
4	Sunvik	Fe500	16	1.58	520	652	20.0%	Satisfactory	Satisfactory
5	Sunvik	Fe500	20	2.47	533	672	20.0%	Satisfactory	Satisfactory

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TEST REPORT FOR PLASTER SAND

Lab ID	:	**CP-2020-05-04-04** **Date: 12-03-20**
Customer	:	Assistant Executive Engineer, Yelahanka Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant in Kempegowda Ward No:01 of Yelahanka Sub Division
Agency	:	Sri. Veeranjaneya, Sri Sai Vishal Ro Technologies, No:31, C94, Nimishamba Building 2nd Floor, Opp 10th BMTC Bus Depot ,K.K.Halli, Bangalore-560043
Customer's Reference	:	EE/YNK.D/EPMT-16/W.O/256/2019-20
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	06-03-20
Sample Type	:	Plaster Sand
Reference to BIS codes	:	IS: 383 : 2016 (Specification for Coarse and fine Aggregates) IS1542:1992 (Sand for Plaster - Specification) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	06-03-20
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS: 2116-1980 (RA-2007)
1	10 mm	0	0	0	100	100
2	4.75 mm	35	35	3.5	96.5	95-100
3	2.36 mm	15	50	5	95	95-100
4	1.18 mm	50	100	10	90	90-100
5	600 micron	100	200	20	80	80-100
6	300 micron	215	415	41.5	58.5	20-65
7	150 micron	500	915	91.5	8.5	0-15
8	Pan	85	1000	100	0	---

AE-1

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-05-04-04** **Date: 12-03-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.8	–
2	Specific Gravity	2.56	–
3	Material finer than 75 micron(%)	8.5	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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